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(54) Method and apparatus for a to-be-visited site list accessible through a web enabled application

(57) A method and apparatus for creating and utilizing To-Be-Visited sites in a web enabled application accessible list is provided. The apparatus includes an access unit 220 for adding the TBV site to the web enabled application accessible list, and a dating/deleting unit 230 for determining whether the TBV site is expired, and deleting the TBV site if the TBV site has expired.

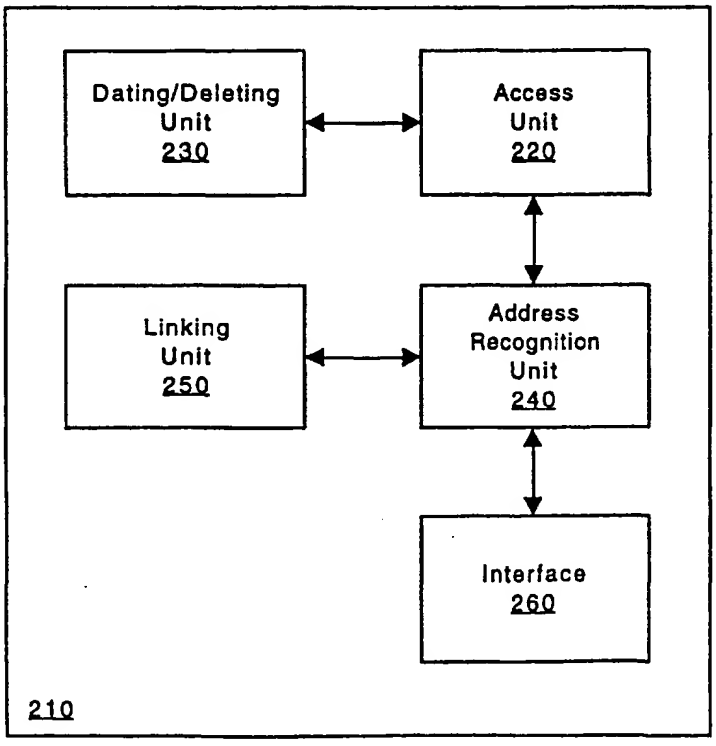

FIG. 2

EP 0 889 423 A1

Description

FIELD OF THE INVENTION

The present invention relates to computer network applications, and more specifically, to Internet enabled applications.

BACKGROUND OF THE INVENTION

The World Wide Web (web, www), a portion of the Internet which uses particular protocol, is an ever expanding information source which is used in work and play. The Web is accessed through a web enabled application. Web enabled applications include web browsers such as Internet Explorer and Navigator by Netscape Corel Office for Java by Corel, HotJava™ by Sun™* , etc. and application programs such as Access and, Kona and Domino by Lotus, etc. For the user's convenience, a today's web enabled application may include a Favorites or Bookmarks list. This list is provided by the web enabled application, and is modified by the user. Generally, the user selects a site and directs the web enabled application to go to that site. This involves downloading the site web pages which may be a very time consuming operation. When the user is at the selected site, he or she may select the bookmark or favorite menu item from the web enabled application, and add the current site to the bookmark file. The site then remains in the user's bookmark or favorites list until the user deletes the site.

However, web enabled applications do not allow a user to automatically add a site to the Bookmarks or Favorites list without first visiting the site (i.e. downloading site web pages). This means that if the site is not available, the user can only add the site to the Bookmark or Favorites list by typing in the name and resource locator (RL) of the site. This is disadvantageous, because it requires the user to retype an address which is already available.

Additionally, the bookmarks can only be added within the web enabled application. Thus, when a user receives an e-mail which includes an RL, he or she can not add the RL included in the e-mail to the Bookmarks list, without retyping it or visiting it.

Furthermore, the Bookmark list is permanent. Bookmarks remain in the Bookmark file until the user deletes them. In some instances, a user merely wishes to retain a To-Be-Visited site's address temporarily.

BRIEF SUMMARY OF THE INVENTION

Tne present invention includes a method and apparatus for including a To-Be-Visited (TBV) list in a web enabled application. A TBV list contains TBV sites, which are sites a user wishes to access at a future time. The apparatus includes an access unit for adding a TBV site to the TBV list. The TBV list is accessible to a plurality of web enabled applications. The apparatus further may include a dating/deleting unit for determining whether the TBV site is expired, and deleting the TBV site if it is expired. The apparatus further may include a resource locator recognition unit, which automatically adds a TBV site received in an electronic message to the TBV list.

BRIEF DESCRIPTION OF THE DRAWINGS

The present invention is illustrated by way of example, and not by way of limitation, in the figures of the accompanying drawings and in which like reference numerals refer to similar elements and in which:

Figure 1 is a block diagram of a computer system in which one embodiment of the present invention is implemented.

Figure 2 is a block diagram of one embodiment of the present invention.

Figure 3 is a flowchart illustrating one embodiment of a method of adding a To-Be-Visited site address to a web enabled application accessible list in accordance with the present invention.

Figure 4 is a flowchart illustrating one embodiment of a method of deleting a To-Be-Visited site from the web enabled application accessible list in accordance with the present invention.

Figure 5 is a block diagram illustrating the elements of a To-Be-Visited site in a web enabled application.

Figure 6 is an illustration of a web browser including a bookmark file having a To-Be-Visited file.

Figure 7 is an illustration of a web browser including a To-Be-Visited Menu item.

Figure 8 is an illustration of a web browser including a pop-up menu having a To-Be-Visited menu item.

DETAILED DESCRIPTION OF EMBODIMENTS

A method and apparatus for including To-Be-Visited (TBV) sites in a web enabled application is described. In the following description, for the purposes of explanation, numerous specific details are set forth in order to provide a

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thorough understanding of the present invention. It will be apparent, however, to one skilled in the art that the present invention may be practiced without these specific details. In other instances, well-known structures and devices are shown in block diagram form in order to avoid unnecessarily obscuring the present invention.

Figure 1 is a block diagram of the computer system 100 in which an embodiment of the present invention can be implemented. Computer system 100 comprises a bus 110 or other communication means for communicating information, and a processor 120 coupled with bus 110 for processing information. Computer system 100 also comprises a read only memory (ROM) and/or other static storage device 135 coupled to bus 110 for storing static information and instructions for processor 120.

The computer system 100 further comprises a main memory 130, a dynamic storage device for storing information and instructions to be executed. Main memory 130 also may be used for storing temporary variables or other intermediate information during execution of instructions. In one embodiment the main memory 130 is dynamic random access memory (DRAM).

Computer system 100 can also be coupled via bus 110 to a display device 150, such as a cathode ray tube (CRT) or liquid crystal display (LCD) screen, for displaying information to a computer user. An alphanumeric input device 155 is typically coupled to bus 110 for communicating information and command selections to processor 120. Another type of user input device is cursor control device 160, such as a mouse, a trackball, trackpad, or cursor direction keys for communicating direction information and command selections to processor 120 and for controlling cursor movement on display device 150. Alternatively, other input devices such as a stylus or pen can be used to Interact with the display. The computer system 100 may further be coupled via the bus 110 to a network communication device 165. The network communication device 165 may be utilized to couple the computer system to other computer systems, as well as the World Wide Web (web, www). The computer system 100 may further be coupled via the bus 110 to a communication device 170. The communication device 170 may be a speaker or microphone, or other device to communicate between a user and a computer system 100.

The present invention is related to a web enabled application in a computer system 100. According to one embodiment, a To-Be-Visited (TBV) site list is managed by computer system 100 in response to the processor 120 executing sequences of instructions contained in memory 130. Execution of the sequences of instructions causes the computer system 100 to add TBV sites, delete TBV sites, and visit TBV sites as will be described hereafter. In alternative embodiments, circuit logic internal to the computer system 100 may be used in place of or in combination with software to implement the present invention. Thus, the present invention is not limited to any specific combination of hardware and software.

Figure 2 is a block diagram of one embodiment of the present invention. The TBV unit 210 is designed to allow To-Be-Visited (TBV) sites to be stored in a computer system. and accessible through a web enabled application, such as a browser or application program. Such TBV sites are sites which the user may or may not have visited in the past.

The TBV sites may be added inside or outside the web enabled application, as will be described below. The TBV unit 210 includes an access unit 220 which accesses the web enabled application, or a file associated with a web enabled application, and adds To-Be-Visited (TBV) sites. In one embodiment, the TBV sites are stored in a separate TBV file. In an alternate embodiment, the TBV sites are in a special TBV folder within a Bookmark file of the web enabled application. Alternately, the TBV sites may be stored in a Bookmark file which is accessible by a plurality of web enabled applications. The access unit 220 may add the TBV site either by accessing a web enabled application and adding the file through the web enabled application menu, or alternately, by accessing a Bookmark or TBV file directly, without starting the web enabled application.

The TBV sites may be available and displayed by a plurality of web enabled applications. In one embodiment, the TBV sites are displayed in all web enabled applications which are capable of displaying Bookmark or TBV files. Thus, the TBV list acts as a universal file list. Alternatively, a user may determine in what applications TBV sites should be displayed.

A dating/deleting unit 230 is coupled to the access unit 220. The dating/deleting unit 230 is for determining whether a site has expired, and should be deleted from the TBV site list. In one embodiment, a site is deleted from the TBV site list when TBV site is visited by the user. Alternatively, the site may be deleted from the TBV site list after a certain period of time has elapsed. In one embodiment, the user may select, via the interface 260, the type of deletion policy preferred.

An address recognition unit 240 is further included in the TBV unit 210. The address recognition unit 240 recognizes a resource locator (RL) in an electronic message, and adds the RL to the TBV site list. The resource locator (RL) may be any address which designates a location on the Internet. For example, the RL may be a uniform resource locator (URL), or any other designation which permits access of a location on the Lnternet. These electronic messages may include electronic mail (e-mail) messages, electronically received facsimile messages, and similar electronic messages. In one embodiment, the user can select the option of automatically adding all RLs to the TBV list. Alternatively, the user can select an optional add function. In that case, when the address recognition unit 240 recognizes an RL, a menu is automatically displayed. This menu permits th user to select whether the sit should be added to the TBV sites. In

one embodiment, th menu further permits the user to change the title/RL of the TBV site to be added to the TBV site list. This process is described in more detail below, with respect to Figure 3.

A linking unit 250 is coupled to the address recognition unit 240. The linking unit 250 links the electronic message containing a reference to the RL to the TBV site in the web enabled application. For example, when a user receives, an e-mail message which contains an RL, the linking unit 250 links the e-mail message with the TBV site which is placed in the web enabled application. Similarly, other types of electronic messages may be linked to th TBV site. Thus, when the TBV site list is examined, an icon indicates that ther is a linked message. In one embodiment, the user can select the icon, and the linked message is displayed. Thus, a context is provided for the RLs within the TBV site list. In one embodiment, the linking unit 250 further maintains the link to the electronic message even if the electronic message is moved. In one embodiment, this is accomplished by storing the address at which the electronic message is stored in memory with the TBV site. Alternatively, the linking unit 250 maintains a copy of the original electronic message separate from the original message.

For one embodiment, the TBV unit 210 further includes an interface 260. Tne interface 260 provides a user interface for the TBV unit 210, as well as an interface with the web enabled application. The interface 260, in one embodiment, provides the menus for adding the TBV site to the web enabled application. For illustrative figures including the menus, please see Figures 5-8. However, it is to be understood that alternative methods of displaying the menus may be utilized. In one embodiment, the interface 260 interacts with the web enabled application to permit the display of a To-Be-Visited menu item.

Figure 3 is a flowchart illustrating one embodiment of a method of adding a To-Be-Visited site from an electronic message to a web enabled application. A TBV site includes at least an RL. At block 310, the process tests whether there is a new electronic message. In one embodiment, these electronic messages may include electronic mail (e-mail) messages, electronically received facsimile messages, and similar electronic messages. If no message is received, the process returns to block 310. If a new message is detected at block 310, the process continues to block 315. Note that this may be an interrupt driven process, even though the process is illustrated as a loop.

At block 315, the electronic message is scanned. Each word in the message is compared to a database of known RL terms. These terms may include: http, //, www, .com, .edu, .gov, .net, etc. When such a term is detected, the address recognition unit 240 notes that there is an RL in the message. In one embodiment, when the RL is a URL, and the URL is not complete, the address recognition unit 240 completes the URL. Thus, for example, the URL www.sun.com is completed to be http://www.sun.com. In one embodiment, if an incomplete URL which has no extension is received, the RL is completed by adding a ".com" to the URL.

At block 320, the process tests whether any RLs were detected within the electronic message. If no RLs were detected, the process returns to block 310. If an RL was detected, the process continues to block 325.

At block 325, it is determined whether the detected RL are to be designated as TBV sites. In one embodiment, this comprises displaying a menu with the RL to the user, and permitting the user to select whether the RL should be designated as a TBV site. In an alternative embodiment, all detected RLs are automatically designated as TBV sites. In one embodiment, the user can set a preference as to which method to use in designating TBV sites.

If an RL is recognized to be a TBV site, the process continues to block 330, where the RL is designated as a TBV site. The process then returns to block 335. If the RL is determined not to be a TBV site, the process continues directly to block 335.

At block 335, the process queries whether there are any further RLs to be tested. Each RL is tested according to this process. Thus, if there are further RLs, the process returns to block 325. If there are no further RLs, the process continues to block 340.

At block 340, it is determined whether any RLs have been designated as TBV sites at block 330. If there are no RLs designated as TBV sites, the process ends. If there are some RLs designated as TBV sites, the process continues to block 345.

At block 345, the process determines how the TBV sites are stored. In one embodiment, the TBV files may either be stored in the Bookmark file, or in a TBV file. Generally the Bookmark file and TBV file are stored as text files and are accessible by the TBV unit 210.

If the TBV sites are stored as Bookmark files, the process continues to block 355. At block 355, the designated TBV sites are added to the Bookmark files. In one embodiment, this is accomplished by directly accessing a Bookmark file associated with a web enabled application. In an alternate embodiment, the web enabled application is opened, and a menu is utilized to add the TBV sites to the Bookmark file.

If the TBV sites are stored in a TBV file, the process continues to block 350. At block 350, the designated TBV sites are added to the TBV file. This may be done by accessing the TBV file directly, or by utilizing the web enabled application menus to add the sites.

Figure 4 is a flowchart illustrating one embodiment of a method of determining whether a To-Be-Visited site is to be deleted from the TBV files list. The TBV files list is continually tested to determine whether any of th RLs are to be deleted from the TBV files list. In one embodiment this process is initiated very time a user starts a web enabled

application. Alternatively, this process may be initiated on a regular basis, such as once a day.

At block 410, th process queries whether there are any untested TBV sites. If there are no untested TBV sites, the process terminates. If there are unt sted TBV sites, the process continu s to block 420.

At block 420, the process tests whether the deletion policy is set to "time elapsed". In one embodiment, the deletion policy is set by user preferences. In one embodiment, the deletion policy may be set to automatically delete sites after a certain number of days has elapsed from the date that the site was added to the TBV site list. In another embodiment, the deletion policy may be set to delete only after a user has visited a site. In yet another alternate embodiment, the deletion policy may be set to delete either when the time has elapsed or when the user has visited the site. It is to be understood that other prompts for erasing TBV sites may be added to this list, and utilized. If the deletion policy is set to time elapsed, the process continues to block 415.

At block 425, the current date is compared to the date on which the TBV site was added. This conventional date comparison technique is known in the art.

At block 430, the process determines whether the time elapsed is greater than the retention time. If the elapsed time is greater than the retention time, the process continues to block 435. If the elapsed time is less than the retention time, the process returns to block 410.

At block 435, the TBV site is deleted, since the elapsed time was greater than the retention time. The process then returns to block 410.

If at block 420, it was determined that the deletion policy was not set to time elapsed, the process continues to block 440.

At block 440, the process tests whether the TBV site was visited by the user. In one embodiment this information is stored with the rest of the information about the TBV site, as will be described below. In one embodiment, this information is a simple binary toggle, which is set to indicate whether or not a user has visited the TBV site. If the user has visited the TBV site, the process continues to block 435, where the TBV site is deleted. If the user has not visited the TBV site, the process continues to block 450.

At block 450, it is tested whether the deletion policy is set to both, time elapsed time and visited site. If the deletion policy is set to both, the process continues to block 455, and the process returns to block 425. If the deletion policy is not set to both elapsed time and visited site, the returns to block 410.

Figure 5 is a block diagram illustrating one embodiment of the contents of the information stored with respect to each TBV site. As an example, the following message is utilized:

Table 1

To	Mike Albers
From	Joe Smith
Subject	New Java Developer's Site!
Date	July 4, 1997
Mike, look at the cool new site that Sun has at www.sun.java.com. - Joe	

Block 510 stores the site title. In Bookmark files, generally a title is associated with an RL. Thus, for example, the RL http://www.sun.com has the title of Sun Microcomputers. For another example, the RL http://www.m-w.com has the title of Mirriam Webster Dictionary/Reference page. This page is determined by the owner of the page, and may be changed by a user. However, if a site is added to the To-Be-Visited list without accessing the page its title may not be known. Thus, a title associated with a site may be set from one of a number of sources. In one embodiment, the Subject of the e-mail or "New Java Developer's Site!" would be the title associated with the site. Alternatively, the title may be just the RL, http://www.sun.java.com. In another alternative, the title may be derived from the originator of the message, such as "Recommended by Joe Smith", or similar format. Alternatively, the system can access the site automatically without informing the user, determine the title, and add the title to the TBV site. In yet another alternative, the user is prompted to enter a title.

Block 520 stores the RL of the site. In one embodiment, the RL is stored in hypertext markup language (HTML). The RL in the example above is http://www.sun.java.com. Recall that after the address recognition unit 240 extracts the RL, the RL is completed. In this instance, the "http://" is added to the beginning of the sent RL. In one embodiment, the user is prompted to approve or change the completed RL.

Block 530 stores the dat on which the site was added. This is necessary for calculations with respect to the deletion policy. This information may further be available to the user. In the above example, the date 7/4/1997 would be stored.

Block 540 stores the information whether a site was visited or not visited. In one embodiment this is a simple ON/

OFF toggle which is set OFF when the site is added. When the user selects the site from the To-Be-Visited Sites List, and the site is accessed, th toggle is reset to ON.

Block 550 stores an identifier for the electronic message from which the RL was received. If the site did not originate from an electronic message, block 550 may b zeroes. The information of each TBV site is linked to th originating message. Thus, for example, if a first user sent the message described above, a reference to the message location is placed in block 550. When the message is moved from the in-box, to be filed, block 550 is altered to track the message. Thus, no matter where the message is moved to, the user will be able to access the originating message. In on embodiment, when the message is deleted a copy of the message is saved in the TBV unit 210, so the user can reference the message even after deletion. Alternatively, a copy of the message may be made and the identifier may store the location of the copied message.

Block 560 stores an icon for linked messages, indicating the message type. For example, if the originating message from which the TBV site is an e-mail message, as in the example above, an envelope form may be displayed. Similar icons may be utilized to indicate other originating messages, such as faxes, etc.

Figure 6 is an illustration of one embodiment of a browser including a Bookmark menu item 615 which includes a To-Be-Visited folder 660. The browser includes a menu list 610, an RL display area 620, and a site display area 630. The menu list 610 includes Bookmark menu item 615. The Bookmark menu item 615 is open in this illustration. The Bookmark menu item 615 includes a plurality of folders 650. One of these folders is the To-Be-Visited Folder 660. The To-Be-Visited Folder 660 is similar to all the other folders, but contains To-Be-Visited files 670. Each To-Be-Visited file 670 is displayed by its title 680, and by a linked icon 685. Note that the titles 680 may vary from a user entered title, to a title derived from the sender or subject of the originating message, or the RL.

Figure 7 is an illustration of one embodiment of a browser including a To-Be-Visited Menu item 720. The browser includes an RL display area 620, and site display area 630. The browser also includes a menu list 710, including a To-Be-Visited menu item 720. In this illustration, the To-Be-Visited menu item 720 is open, and displays the To-Be-Visited list 730. The To-Be-Visited list 730 includes a number of titles 740. Each of these titles 740 correspond to a site in the To-Be-Visited list 730. Some of the titles 740 also have a corresponding icon 750, which represents a linked message. Note the variety of titles, which are merely illustrative.

Figure 8 is an illustration of one embodiment of a browser including a pop-up menu 810. In a browser, when a user highlights an RL, pop-up menu 810 may appear. This is one illustration of the pop-up menu 810. The pop-up menu 810 may include an item indicating that the highlighted RL should be opened. Tne pop-up menu 810 also includes an item entitled "Add to To-Be-Visited" 820. This permits the addition of the site, to the To-Be-Visited list. However, this process does not open the RL.

It is to be understood that although the term resource locator (RL) is used in the specification, alternate methods of specifying an object on the Internet may be utilized without changing the spirit of the present invention. Additionally, within an RL type, alternative access schemes or protocols may be utilized. Thus an RL corresponding to file transfer protocol (ftp), telnet, etc. may be utilized.

In the foregoing specification, the invention has been described with reference to specific embodiments thereof. It will, however, be evident that various modifications and changes may be made thereto without departing from the broader spirit and scope of the invention. The specification and drawings are, accordingly, to be regarded in an illustrative rather than a restrictive sense. The present invention should not be construed as limited by such embodiments and examples, but rather construed according to the following claims and their equivalents.

The processes described above may be performed by a computer program running on a computer in the embodiment described. Such a computer program can be recorded on a recording medium (for example a magnetic disc or tape, an optical disc or an electronic memory device, such as a ROM) in a way well known to those skilled in the art. When the recording medium is read by a suitable reading device, such as a magnetic or optical disc drive, a signal is produced which causes a computer to perform the processes described.

The processes may also be performed by electronic means.

Claims

1. An apparatus comprising:

   an access unit for adding a To-Be-Visited (TBV) site to a web enabled application accessible list; and
   a dating/deleting unit for determining whether the TBV site is expired, and deleting the TBV site if the TBV site is expired.

2. The apparatus of claim 1 further including a To-Be-Visited bookmark file for filing the TBV site.

3. The apparatus of claim 1 further including a To-Be-Visited menu item for filing the TBV site.

4. The apparatus of claim 1 further including an address recognition unit for recognizing a resourc locator (RL), and for designating the RL as the TBV site, and passing the TBV site to the access unit.

5. The apparatus of claim 4, wherein the address recognition unit further includes an electronic message recognition unit for recognizing the RL in an electronic message.

6. The apparatus of claim 5, wherein the address recognition unit further includes a scanning unit for scanning the electronic message and for automatically identifying text representing the RL.

7. The apparatus of claim 5 further including a linking unit, the linking unit linking the electronic message containing a reference to the RL to the TBV site in the web enabled application accessible list.

8. The apparatus of claim 7, wherein the linking unit maintains a link between the electronic message containing the reference to the RL and the TBV site in the web enabled application accessible list even if the electronic message is moved or filed.

9. The apparatus of claim 1 further including a pop-up menu, the pop-up menu for selecting a resource locator (RL) displayed in a web enabled application and designating the RL as the TBV site.

10. The apparatus of claim 1 wherein the TBV site expires when a user has visited a resource locator (RL) designated by the TBV site.

11. The apparatus of claim 1 wherein the TBV site expires when a time period has elapsed from a date on which the TBV site was added.

12. The apparatus of claim 11 wherein a user may select a time at which the TBV site expires, by selecting the time period elapsed from the date on which the TBV site was added, or by selecting that the TBV site should expire when the user has visited the TBV site.

13. An apparatus comprising:

an access unit for adding a To-Be Visited (TBV) site to a list, the list accessible to a plurality of web enabled applications.

14. An apparatus comprising:

an address recognition unit for recognizing a resource locator (RL) in an electronic message, and for designating the RL a TBV site, and passing the TBV site to an access unit; and
the access unit for adding a To-Be-Visited (TBV) site to a web enabled application accessible list.

15. A method comprising the computer implemented steps of:

receiving a To-Be-Visited (TBV) site;
filing the TBV site in a web enabled application accessible list, thus making the TBV site available to a user utilizing the web enabled application accessible list; and
determining if the TBV site has expired, and if the TBV site has expired, deleting the TBV site from the web enabled application accessible list.

16. The method of claim 15 wherein the TBV site is filed under a To-Be-Visited File in a bookmark file of the web enabled application accessible list.

17. The method of claim 15, wherein the TBV site is filed under a To-Be-Visited menu item.

18. The method of claim 15, wherein the step of receiving a TBV site comprises the steps of:

scanning an electronic message to determine whether the electronic message contains a resource locator

(RL) representing a TBV site; and
recognizing the RL contained in the electronic message.

19. The method of claim 18, further comprising linking the electronic message containing the RL to the TBV filed in the web enabled application accessible list.

20. The method of claim 15, wherein the step of determining if the TBV site has expired comprises the step of determining if the user has visited an address associated with the TBV site and marking the TBV site expired if the user has visited the address.

21. A computer data signal embodied in a carrier wave and representing sequences of instructions which, when executed by a processor, cause said processor to include a To-Be-Visited (TBV) site in a web enabled application by performing the steps of:

receiving a TBV site;
filing the TBV site in the web enabled application accessible list, thus making the TBV site available to a user utilizing the web enabled application accessible list; and
determining if the TBV site has expired, and if the TBV site has expired, deleting the TBV site from the web enabled application accessible list.

22. The computer data signal of claim 21 further comprising the steps of:

scanning an electronic message to determine whether the electronic message contains a resource locator (RL) representing a TBV site;
recognizing the RL contained in the electronic message; and
linking the electronic message containing the RL to the TBV filed in the web enabled application accessible list.

23. A machine readable medium having stored thereon data representing sequences of instructions, which when executed by a computer system, cause said computer system to perform the steps of:

receiving a TBV site;
filing the TBV site in the web enabled application accessible list, thus making the TBV site available to a user utilizing the web enabled application accessible list; and
determining if the TBV site has expired, and if the TBV site has expired, deleting the TBV site from the web enabled application accessible list.

24. The machine readable medium of claim 23, the data representing sequences of instructions, which when executed by the computer system further cause said computer system to perform the steps of:

scanning an electronic message to determine whether the electronic message contains a resource locator (RL) representing a TBV site;
recognizing the RL contained in the electronic message; and
linking the electronic message containing the RL to the TBV filed in the web enabled application accessible list.

25. A signal according to claim 21 or 22, wherein the signal is recorded on a recording medium.

26. A signal according to claim 25, wherein the recording medium comprises a magnetic disc, a magnetic tape, an optical disc or an electronic memory device.

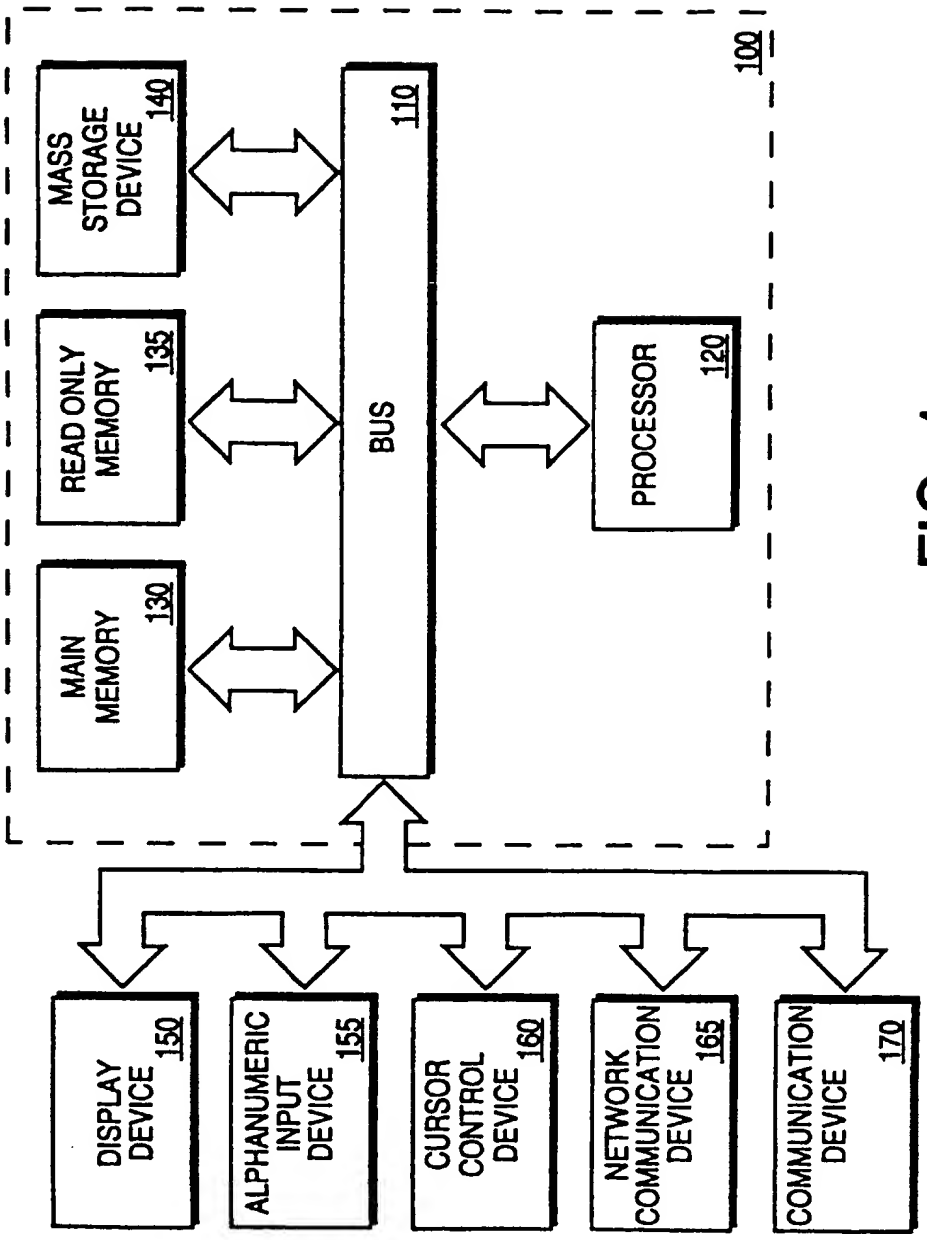
100
MASS STORAGE DEVICE 140
READ ONLY MEMORY 135
MAIN MEMORY 130
BUS 110
PROCESSOR 120
DISPLAY DEVICE 150
ALPHANUMERIC INPUT DEVICE 155
CURSOR CONTROL DEVICE 160
NETWORK COMMUNICATION DEVICE 165
COMMUNICATION DEVICE 170

FIG. 1

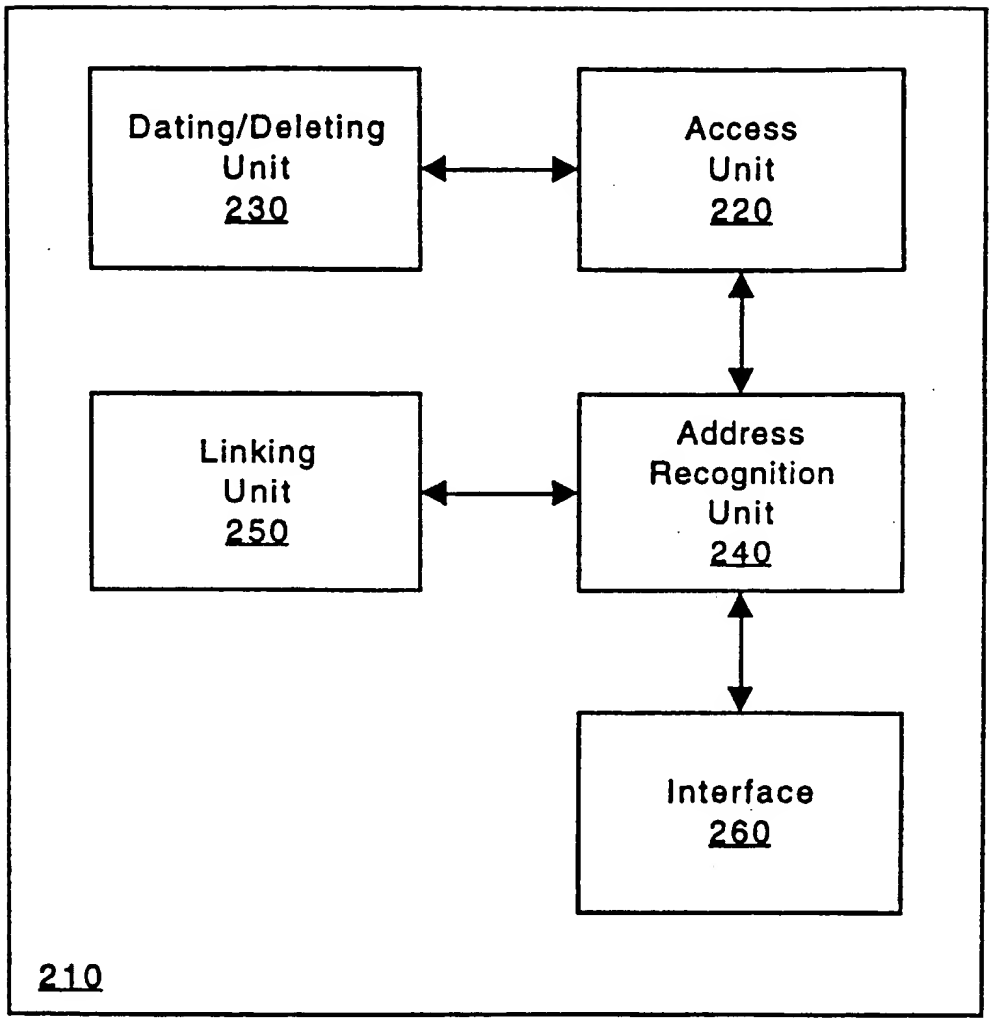
Dating/Deleting Unit 230
Access Unit 220
Linking Unit 250
Address Recognition Unit 240
Interface 260
210

FIG. 2

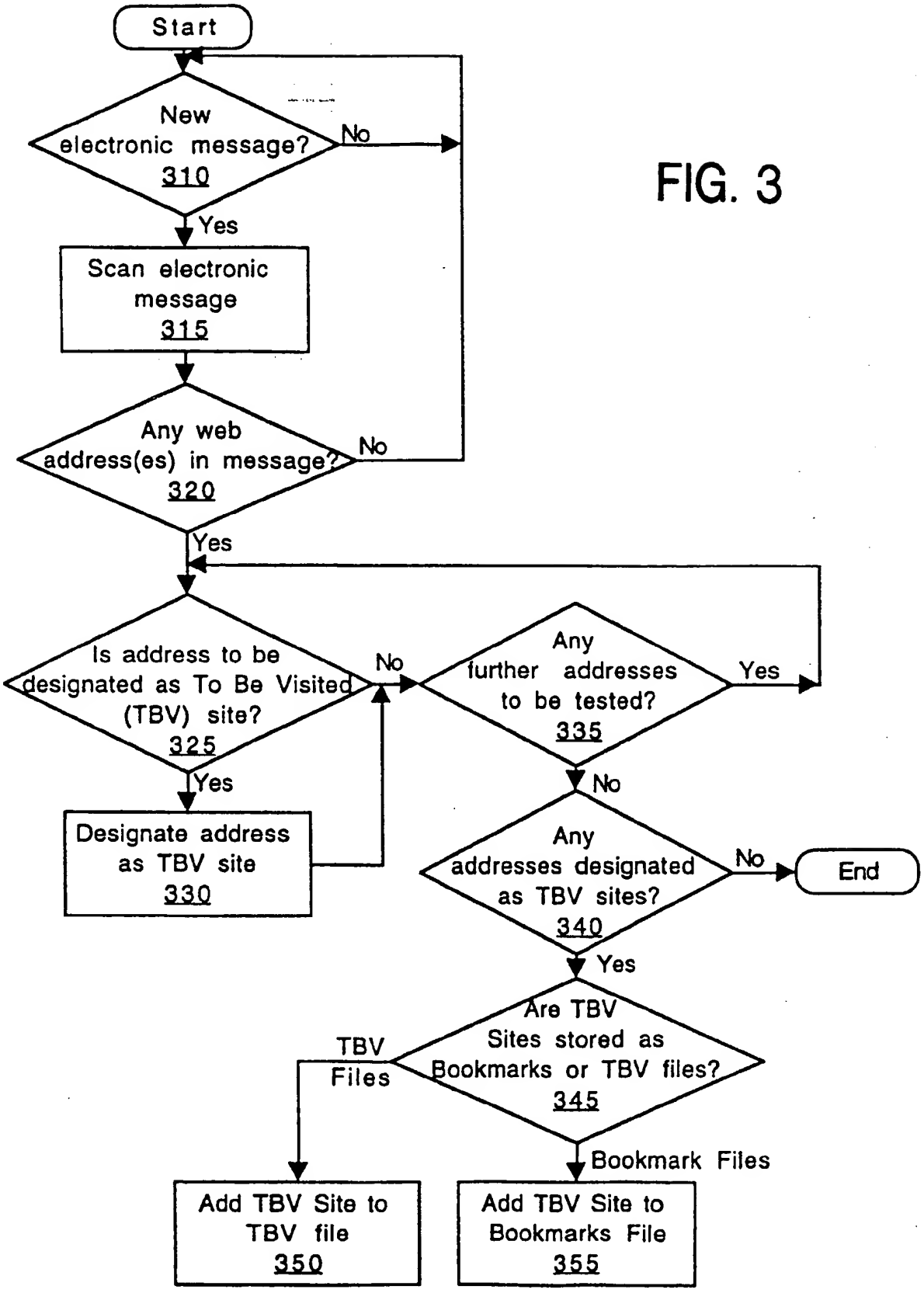
Start
New electronic message? 310
No
Yes
Scan electronic message 315
Any web address(es) in message? 320
No
Yes
Is address to be designated as To Be Visited (TBV) site? 325
No
Yes
Designate address as TBV site 330
Any further addresses to be tested? 335
Yes
No
Any addresses designated as TBV sites? 340
No
End
Yes
Are TBV Sites stored as Bookmarks or TBV files? 345
TBV Files
Bookmark Files
Add TBV Site to TBV file 350
Add TBV Site to Bookmarks File 355

FIG. 3

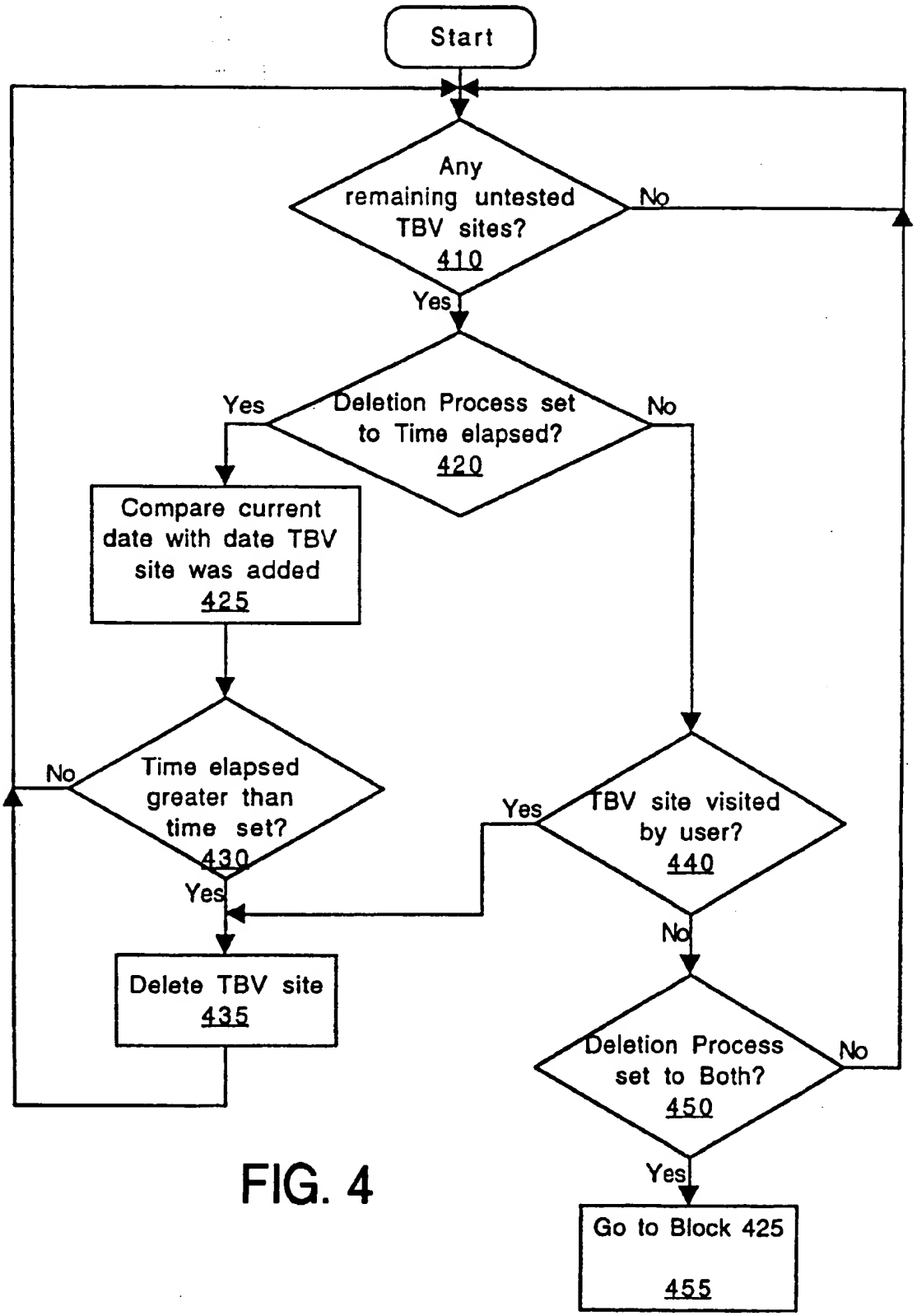
Start
Any remaining untested TBV sites? 410
No
Yes
Deletion Process set to Time elapsed? 420
Yes
No
Compare current date with date TBV site was added 425
Time elapsed greater than time set? 430
No
Yes
TBV site visited by user? 440
Yes
No
Delete TBV site 435
Deletion Process set to Both? 450
No
Yes
Go to Block 425 455

FIG. 4

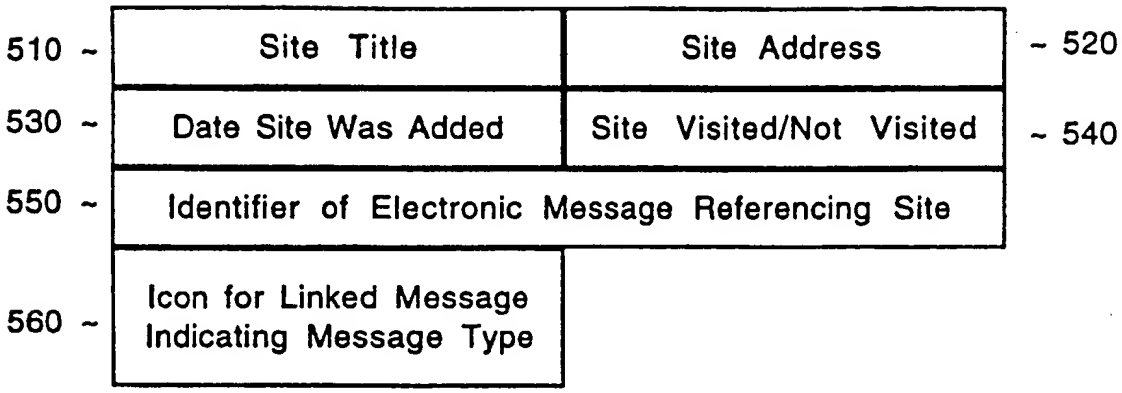
510
Site Title
Site Address
520
530
Date Site Was Added
Site Visited/Not Visited
540
550
Identifier of Electronic Message Referencing Site
560
Icon for Linked Message Indicating Message Type

FIG. 5

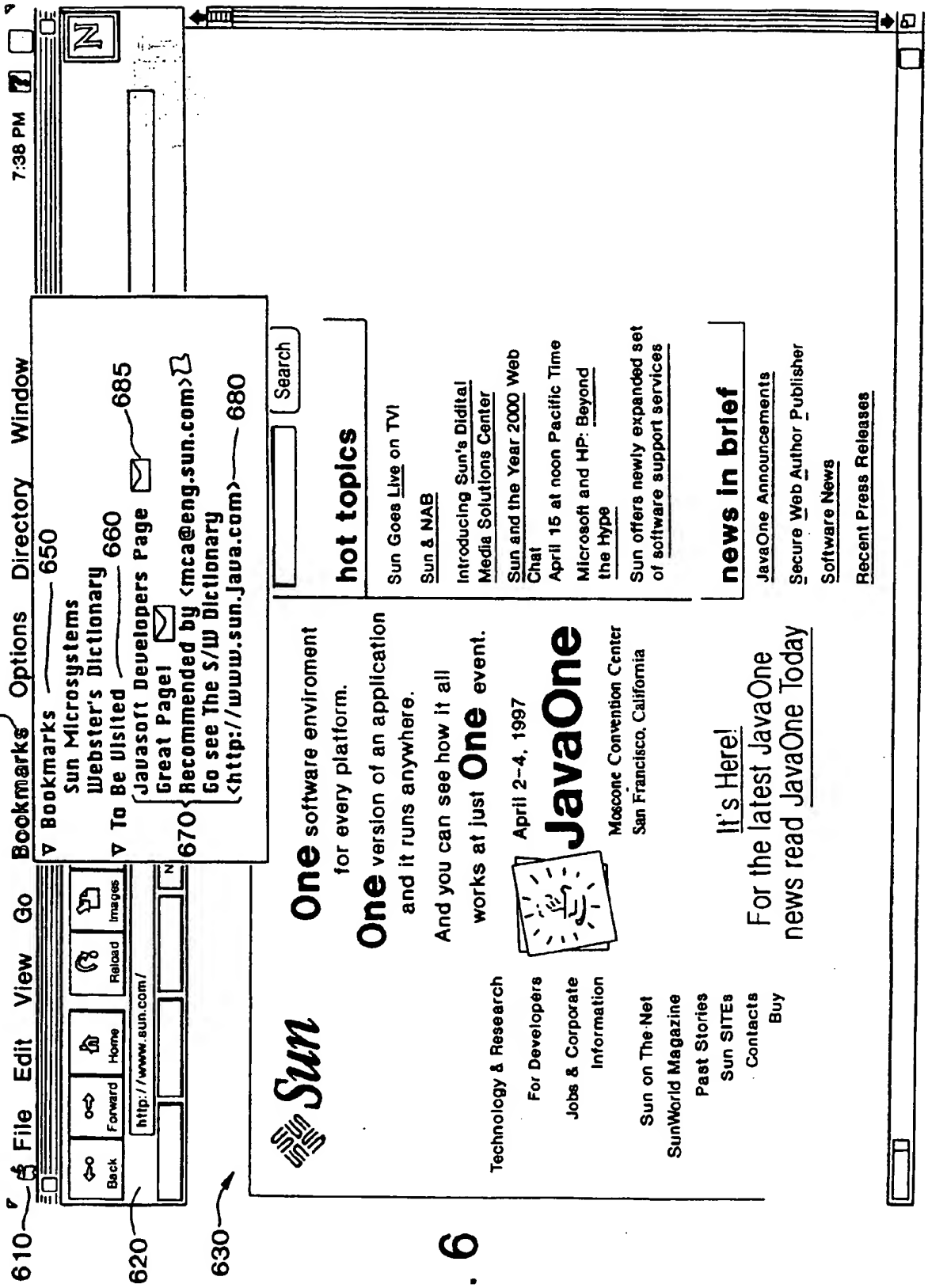
File Edit View Go Bookmarks Options Directory Window
7:38 PM
Back Forward Home Reload Images
http://www.sun.com/
Bookmarks
Sun Microsystems
Webster's Dictionary
To Be Visited
Javasoft Developers Page
Great Page!
Recommended by <mca@eng.sun.com>
Go see The S/W Dictionary
<http://www.sun.java.com>
Search
Sun
One software enviroment for every platform.
One version of an application and it runs anywhere.
And you can see how it all works at just One event.
April 2-4, 1997
JavaOne
Moscone Convention Center
San Francisco, California
It's Here!
For the latest JavaOne news read JavaOne Today
hot topics
Sun Goes Live on TV!
Sun & NAB
Introducing Sun's Didital Media Solutions Center
Sun and the Year 2000 Web Chat
April 15 at noon Pacific Time
Microsoft and HP: Beyond the Hype
Sun offers newly expanded set of software support services
news in brief
JavaOne Announcements
Secure Web Author Publisher
Software News
Recent Press Releases
Technology & Research
For Developers
Jobs & Corporate Information
Sun on The Net
SunWorld Magazine
Past Stories
Sun SITEs
Contacts
Buy
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FIG. 6

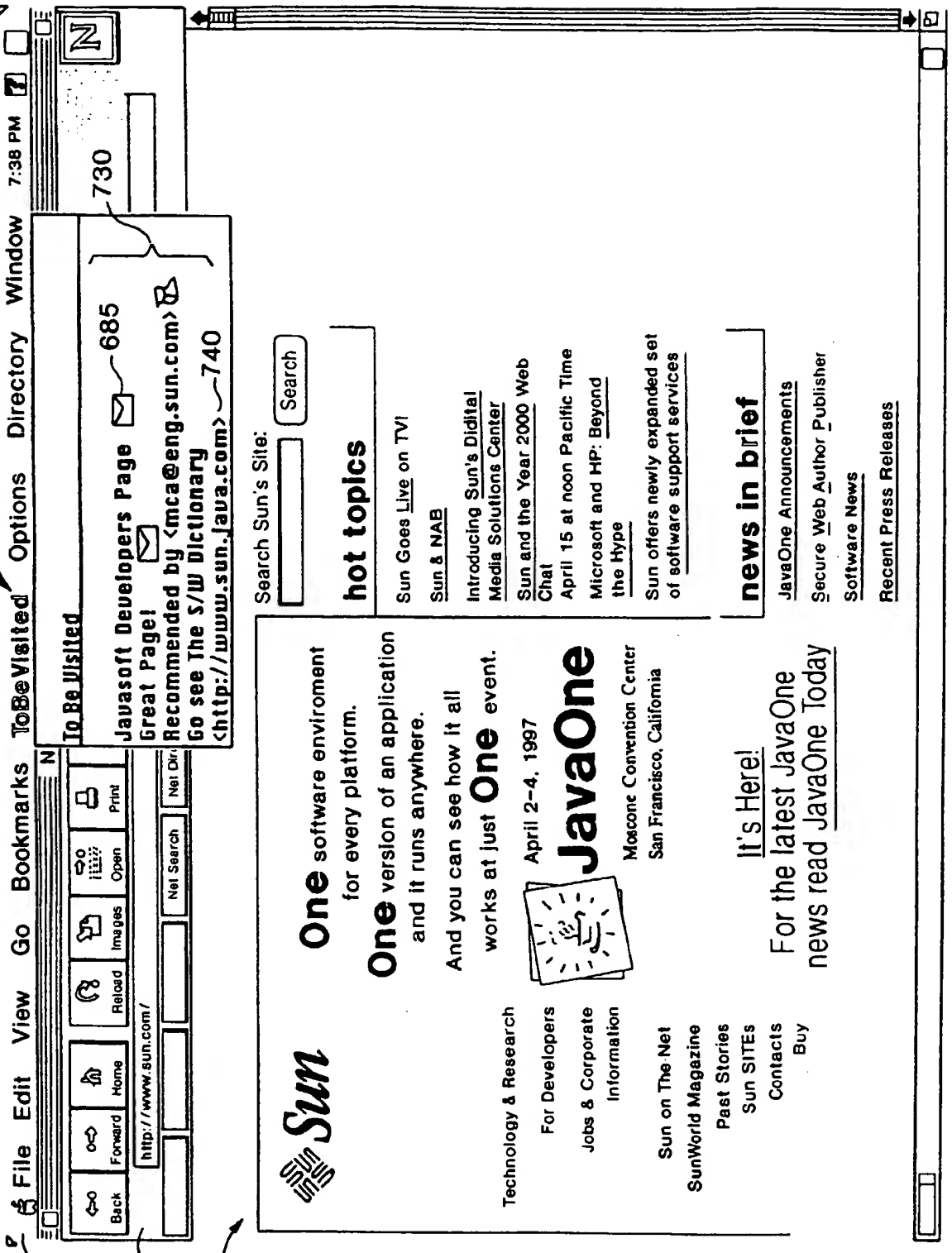
710
720
620
630
730
685
740
File Edit View Go Bookmarks ToBeVisited Options Directory Window 7:38 PM
Back Forward Home Reload Images Open Print
http://www.sun.com/
Net Search
To Be Visited
Javasoft Developers Page
Great Page!
Recommended by <mca@eng.sun.com>
Go see The S/W Dictionary
<http://www.sun.java.com>
Search Sun's Site:
Search
Sun
One software enviroment for every platform.
One version of an application and it runs anywhere.
And you can see how it all works at just One event.
April 2-4, 1997
JavaOne
Moscone Convention Center
San Francisco, California
It's Here!
For the latest JavaOne news read JavaOne Today
hot topics
Sun Goes Live on TV!
Sun & NAB
Introducing Sun's Didital Media Solutions Center
Sun and the Year 2000 Web Chat
April 15 at noon Pacific Time
Microsoft and HP: Beyond the Hype
Sun offers newly expanded set of software support services
news in brief
JavaOne Announcements
Secure Web Author Publisher
Software News
Recent Press Releases
Technology & Research
For Developers
Jobs & Corporate Information
Sun on The Net
SunWorld Magazine
Past Stories
Sun SITEs
Contacts
Buy

FIG. 7

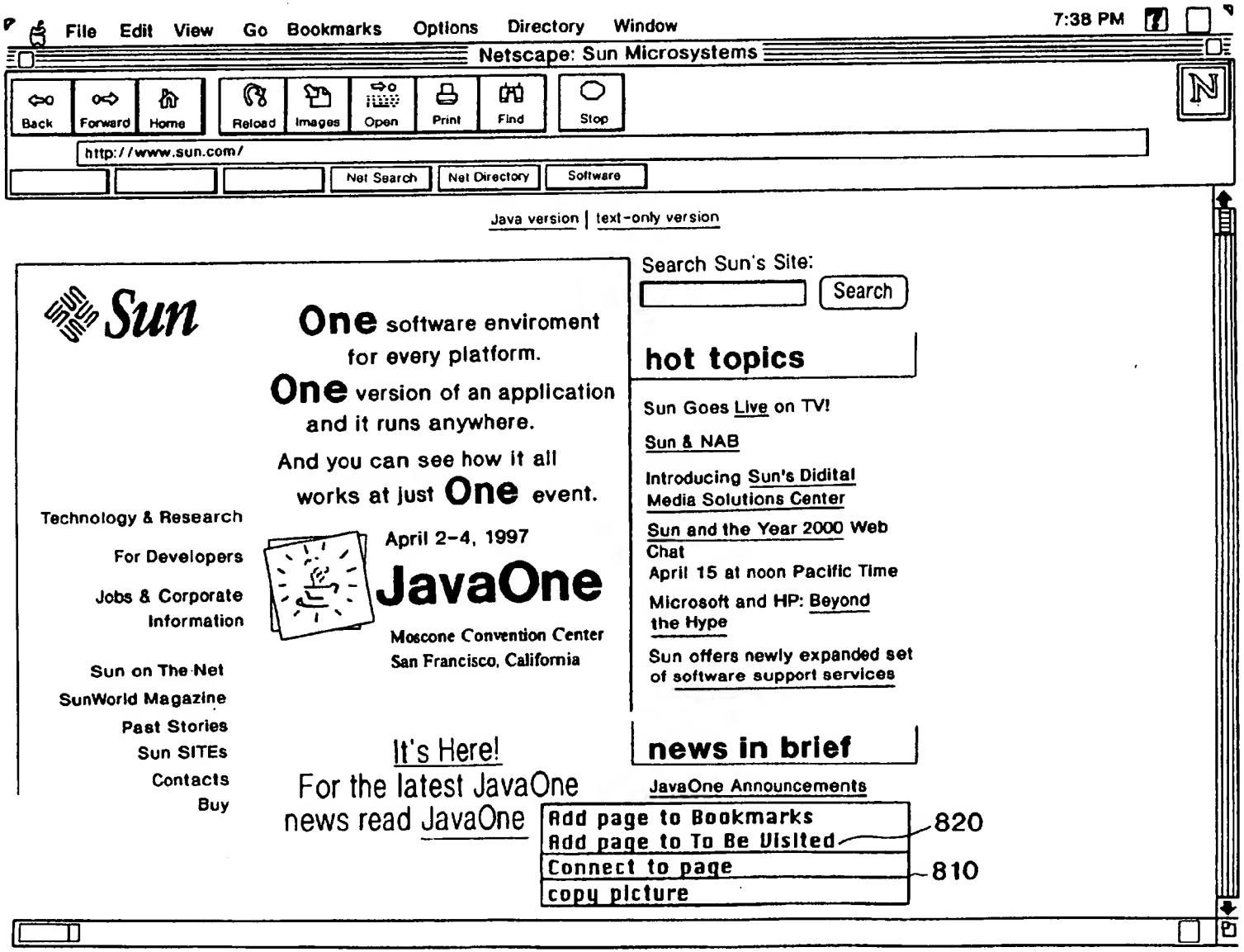

FIG. 8

EP 0 889 423 A1

European Patent Office

EUROPEAN SEARCH REPORT

Application Number
EP 98 30 5151

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.6)
X A	US 5 625 781 A (CLINE TROY L ET AL) 29 April 1997 * column 2, line 13 - line 44 * * column 3, line 30 - column 4, line 23; figures 2,3 *	13,14, 21,22 1-12	G06F17/30
P,A	EP 0 833 258 A (AT & T CORP) 1 April 1998 * column 6, line 41 - column 7, line 35 *	1,13-15	
A	EP 0 736 834 A (CANON KK) 9 October 1996 * column 4, line 56 - column 6, line 12; figures 1-3 *	1	

TECHNICAL FIELDS SEARCHED (Int.Cl.6)

G06F

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
BERLIN	8 October 1998	Deane, E

CATEGORY OF CITED DOCUMENTS

X : particularly relevant if taken alone
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E : earlier patent document, but published on, or after the filing date
D : document cited in the application
L : document cited for other reasons

& : member of the same patent family, corresponding document

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